UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,948	11/13/2000	Samsikrishna Vamsi Krishna	JP920000282US1	6339

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EXAMINER
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ART UNIT	PAPER NUMBER
2122	8

DATE MAILED: 08/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- *The MAILING DATE of this communication appears on the cov r sh et with th correspondenc address --*

Period for R ply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 July 2003* .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

Claims 3, 16 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention "Unix-like". Clarification and/or correction are

required. The Examiner interprets it as "Multitasking".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 14-15 and 27-28 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Rosenberg, "How Debuggers Work: algorithm, data structure, and

architecture" John Willy & Sons, Inc., 1996, in view of Sumi et al. (US Patent No

5,881,288) hereafter Sumi.

Per Claim 1, Rosenberg disclosed *using an identifier of a file and an offset in*

said file(see page 110 , Algorithm 6.1 **Breakpoint** setting, "Input **File name** and line

number or file **offset** in source file"). Rosenberg did not disclose an excutable file.

However, Sumi teached setting a breakpoint in the executable file . (see Column 19,

Lines 11-15, "The **breakpoint** setting unit 203 receives a breakpoint indication from the

user which is made in line units, converts the indicated breakpoint into an address in the

execution code, and sets a breakpoint at the converted address in the **execution code**.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to set a breakpoint in an executable code, as suggested by Sumi, to

use as a breakpoint indication. The modification would have been obvious because one of

ordinary skill in the art would have been motivated to add flexibility of breakpoint

setting.

     Per Claim 2, Rosenberg disclosed

-file identifier is a file name. (see page 110 , Algorithm 6.1 Breakpoint setting,

"Input **File name** and line number or file offset in source file").

     Claim 14 is the computer implemented claim corresponding to the method claim 1

and is rejected under the same reason set forth in connection of the rejection of claim 1.

Further Sumi disclosed **a central processing unit for executing said computer**

software and memory for storing at least a portion of said computer software. (see

Column 1, Lines 62-67, "The debugging apparatus shown in FIG. 1 is made up of a

program storage unit 301, a generated code storage unit 302, an optimization

information storage unit 303, a **debugging information storage unit** 304, an input unit

401, a **code execution unit** 402, a variable operation unit 403, an output unit 404, and a

line display unit 405.").

Claim 15 is rejected under the same reason set forth in connection of the rejection

of claim 2.

Claim 27 is the computer program product claim corresponding to the method

claim 14 and is rejected under the same reason set forth in connection of the rejection of

claim 14.

Claim 28 is rejected under the same reason set forth in connection of the rejection

of claim 2.

Claims 3, 16 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Rosenberg, "How Debuggers Work: algorithm, data structure, and architecture"

John Willy & Sons, Inc., 1996, in view of Sumi (US Patent No 5,881,288), in further

view of O'Connor (US Patent No 6,584,582).

Per Calim 3, Rosenberg disclosed file identifier is a file name. Neither Sumi nor

Rosenberg disclosed inode. However, O'Connor teached inode. (see Column 4, Lines 64-

67, continuing to Column 5, Line 1, "in the Unix file system, every file has an associated

unique "inode" which indexes into an inode table. A directory entry for a filename will

include this inode index into the inode table where information about the file may be

stored."). Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to set a breakpoint in an UNIX environment, as suggested

by O'Connor, to use an inode to represent a file. The modification would have been

obvious because one of ordinary skill in the art would have been motivated to run the

software in different operating systems.

Claim 16 is rejected under the same reason set forth in connection of the rejection

of claim 3.

Claim 29 is rejected under the same reason set forth in connection of the rejection

of claim 3.

Claims 4, 17 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Rosenberg, "How Debuggers Work: algorithm, data structure, and architecture"

John Willy & Sons, Inc., 1996, in view of Sumi (US Patent No 5,881,288), in further

view of Starek et al. (US Patent No 6,256,646) hereafter Starek..

Per Claim 4, Rosenberg disclosed file identifier is a file name. Neither Sumi nor

Rosenberg disclosed a **file control block**. However, Miller taught **file control block**.

(see Column 6, Lines 3-7, "for the **NT** file system (NTFS). In NTFS, all file and

directory information contained within an NTFS volume is tracked by the Master File

Table (MFT). The MFT is a linear list of File Control Blocks (FCB).") and (see Column

6, Lines 17-19, "NTFS stores directory information by creating additional index runs

that contain all of the <u>file names</u> or sub directory names that are in the directory.").
Therefore, it would have been obvious to one of ordinary skill in the art at the time the
invention was made to set a breakpoint in NT environment, as suggested by Starek, to use
an file control block to represent a file. The modification would have been obvious
because one of ordinary skill in the art would have been motivated to run the software in
different operating systems.

Claim 17 is rejected under the same reason set forth in connection of the rejection
of claim 4.

Claim 30 is rejected under the same reason set forth in connection of the rejection
of claim 4.

Claims 5, 9-13, 18, 22-26, 31 and 35-39 are rejected under 35 U.S.C. 103(a) as
being unpatentable over Rosenberg, "How Debuggers Work: algorithm, data structure,
and architecture" John Willy & Sons, Inc., 1996, in view of Sumi (US Patent No
5,881,288), in further view of Rabinovici et al. (US Patent No 6,505,285) hereafter
Rabinovici.

Per Claim 5, Rosenberg disclosed file identifier is a file name. Neither Sumi nor
Rosenberg disclosed a **virtual address**. However, Rabinovici teached *resolving a virtual
address of said code to said file identifier and said offset*. (see abstract, "The SEG

subsystem works with transient segments (also referred to as scratch segments) that are

created as **offsets** in a "well-known" **file** created during initialization of the PDE. The

offsets are stored in objects/elements in a queue in the virtual address space of the SEG

subsystem. Upon partitioning addressable memory into one or more scratch segments,

obtaining the **offsets** for the scratch segments, and **mapping** the offsets into the SEG

system's **virtual address** space, the physical memory is locked."). Therefore, it would

have been obvious to one of ordinary skill in the art at the time the invention was made to

map the file offset in a virtual address space, as suggested by Rabinovici, to find where

an object is located in a computer system. The modification would have been obvious

because one of ordinary skill in the art would have been motivated to access any address

of the whole computer system.

Claim 9 is an obvious variation of limitation step of claim 5 because it is just a

reversed operation of the step perform therin. Hence, it would have also benn obvious

using the same rationale as set forth in claim 5.

As per Claim 10, Rabinovici disclosed computer **operating system** (see Fig. 1,

OS 110) and used file and offset with **memory mapping** to a virtual address.(see claim

5).

Claim 11 is rejected under the same reason set forth in connection of the rejection

of claim 10.

Claim 12, Rabinovici disclosed

-*two or more virtual addresses exist.*(see abstract, "The offsets are stored in

objects/elements in a queue in the virtual address **space** of the SEG subsystem.")

As per Claim 13, Rabinovici disclosed

-*a private-per-process copy of a physical page* (see Column 4, Lines 60-54, "A

daemon 212 of the SEG subsystem 206 provides the mapping (the offset and size) in **its**

own virtual address space and locks **the physical pages** behind the offsets so that the

network 104 can perform direct memory access (DMA) operations.").

Claim 18 is rejected under the same reason set forth in connection of the rejection

of claim 5.

Claim 22 is rejected under the same reason set forth in connection of the rejection

of claim 9.

Claim 23 is rejected under the same reason set forth in connection of the rejection

of claim 10.

Claim 24 is rejected under the same reason set forth in connection of the rejection

of claim 11.

Claim 25 is rejected under the same reason set forth in connection of the rejection

of claim 12.

Claim 26 is rejected under the same reason set forth in connection of the rejection

of claim 13.

Claim 31 is rejected under the same reason set forth in connection of the rejection

of claim 5.

Claim 35 is rejected under the same reason set forth in connection of the rejection

of claim 9.

Claim 36 is rejected under the same reason set forth in connection of the rejection

of claim 10.

Claim 37 is rejected under the same reason set forth in connection of the rejection

of claim 11.

Claim 38 is rejected under the same reason set forth in connection of the rejection

of claim 12.

Claim 39 is rejected under the same reason set forth in connection of the rejection

of claim 13.

Claims 6, 19 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Rosenberg, "How Debuggers Work: algorithm, data structure, and architecture"

John Willy & Sons, Inc., 1996, in view of Sumi (US Patent No 5,881,288), in further

view of Fitzgerald (US Patent No 5,408,665).

As Per Claim 6, Rosenberg disclosed file identifier is a file name. Neither Sumi

nor Rosenberg disclosed a **symbol expression**. However, Fitzgerald teached **offset is**

obtained using symbol expressions. (see Column 8, Lines 53-56, "From a symbol

stored in the list, one may determine a file offset for the module containing that symbol in

the library."). Therefore, it would have been obvious to one of ordinary skill in the art at

the time the invention was made to use symbol table, as suggested by Fitzgerald, to

determine the file offset. The modification would have been obvious because one of

ordinary skill in the art would have been motivated to enhance the linker of software.

Claim 19 is rejected under the same reason set forth in connection of the rejection

of claim 6.

Claim 32 is rejected under the same reason set forth in connection of the rejection

of claim 6.

Claims 7-8, 20-21 and 33-34 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Rosenberg, "How Debuggers Work: algorithm, data structure, and

architecture" John Willy & Sons, Inc., 1996, in view of Sumi (US Patent No 5,881,288),

in further view of Murakami et al. (US Patent No 5,892,921) hereafter Murakami.

As Per Claim 7, Rosenberg disclosed file identifier is a file name. Neither Sumi

nor Rosenberg disclosed a **hash list**. However, Murakami teached **a hash list to look up**

said global breakpoint using said file identifier and said offset. (see Column 16, Lines

34-38, "The **hash** queue holds in the form of a **list** the block information related to the

block in which the valid data is stored, for each hash value which uses the **file ID**

number and the in-file **offset** as keys."). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to use file ID and offset as

keys, as suggested by Murakami, to establish a hash queue. The modification would have

been obvious because one of ordinary skill in the art would have been motivated to

improve the buffer management.

As Per Claim 8, Murakami disclosed

-*maintaining hash list*(see Column16 Lines 32-34e buffer management module

23B2 **holds data structures** of hash queues, free lists and the like for managing the

buffer 12 in blocks.").

Claim 20 is rejected under the same reason set forth in connection of the rejection

of claim 7.

Claim 21 is rejected under the same reason set forth in connection of the rejection of claim 8.

Claim 33 is rejected under the same reason set forth in connection of the rejection of claim 7.

Claim 34 is rejected under the same reason set forth in connection of the rejection of claim 8.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. :

Title: Global Events & Global Breakpoints in Distributed Systems. Haban et al,, System Sciences, 1988 Annual Hawaii Int'l Conf. vol. II pp. 166-175..

Title: "Machine-independent virtual memory management for paged uniprocessor and multiprocessor architectures ", Richard Rashid , Avadis Tevanian , Michael Young , David Golub , Robert Baron, Proceedings of the second international conference on Architectual support for programming languages and operating systems October 1987, Volume 15 , 22 , 21 Issue 5 , 10 , 4.

Title: Method and apparatus for generating executable code from object-oriented C++

source code. **US Patent No.:** 5,790,861.

Title: Process and system for merging trace data for primarily interpreted methods. **US**

Patent No.: 6,553564.

Title: System and methods for optimizing compiled code according to code object

participation in program activities. **US Patent No.:** 5,579,520.

Title: Method and apparatus for executing a family generic processor specific

application. **US Patent No.:** 5,835,775.

Title: Virtual machine implementation for shared persistent objects. **US Patent No.:**

6,330,709.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kuo-Liang J Tang whose telephone number is 703-305-

4866. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tuan Q Dam can be reached on 703-305-4552.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 305-3988, (for formal communications intended for entry)

or: (703) 305-3988 (for informal or draft communications, please label

"**PROPOSED**" or "**DRAFT**")

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal

Drive, Arlington, VA. , 22202. 4th Floor(Receptionist).

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-305-

3900.

KLT / *KCT*
July 28, 2003

Chamli C- Don
Patent Examiner
Art Unit 2122